

The annexed figures, 6, 7, and 8, represent a plan and two sections of a portion of a privy and cesspool in accordance with the preceding observations. A represents the cesspool built and rendered inside with Roman cement; B the soil-pan and funnel 5 inches diameter, where it is immersed in the water within the cesspool. A round hole is to be cut through the stone E, the exact size of and to receive the funnel, which has a flange all round it at F, bedded into and on the stone cover. The funnel dipping 4 inches, as before described, into the water below the bottom of the overflow-drain C which is formed of clay tubes 6 inches in diameter, glazed inside. It will be seen that whatever enters the cesspool by the various inlets will be discharged by the drain C in a diluted condition, and the overflow escaping by this drain will be carried into the sewer. D represents a funnel with a trap and drain of clay tubing which convey the surface drainage into the cesspool A. G is a rain-water pipe entering the soil-pan B. The rain-water entering the pan by this pipe, as well as the refuse water thrown into the pan, will have a tendency to keep it clean. A privy thus soundly and properly constructed would be most effectual; the small tubular drain affording an easy transmission to the sewer of all the sullage nearly as fast as engendered, without the least stench emanating therefrom, except what may arise from the evaporation of the insignificant surface exposed within the funnel.

We should recommend in all cases the universal disuse of cesspools and privies, and would substitute proper water-closets in their stead. Every water-closet should be trapped in some way, to prevent the emission of the noxious effluvia. There are many excellent methods of effecting this by the application of soil-pans with traps, which communicate by a lead pipe with main drains. A noisome exhalation is sometimes found to arise from such apparatus, however well made. The emitted stench rises from underneath the seat and flooring, and if a pipe of iron or lead were to be placed somewhere in this locality, and be carried up direct, as high as possible, into the chimney most commonly used, the heat in the chimney would draw off through the pipe the foul air from the water-closet, and all the foul vapour would be carried upwards high into the air with the smoke. A pipe thus fitted to a water-closet would be a very effective appendage, and the means of ventilating and carrying off the exhalations which may arise therein. Nothing can be more annoying and unpleasant than for people to be continually inhaling air loaded with effluvia of the most intolerable and poisonous description. There is no doubt that many diseases among adults may be attributed to this cause, and that young children are thus hurried to a premature grave in consequence, their weak lungs not being of sufficient strength to counteract the sulphuretted hydrogen thus inhaled. The officers of the Courts of Sewers are constantly attending to complaints of foul smells which are found to arise universally from ill-constructed drains without proper stench-traps. By these sources streams of foul vapour are constantly being drawn from the sewers, with which the atmosphere of every room in a house becomes charged: many sewers which would otherwise have their air pent up, are by these means perfectly ventilated. In however nice and clean condition the paper and furniture may be kept, the corrosive acids contained in the foul vapour thus drawn from the sewers and drains are ever covering them, and therefore tend to destroy their brilliancy. The painting also becomes stained and discoloured from the same cause, in a manner which no washing can cleanse.

The pipes which convey the refuse water from kitchen-sinks into the drains are very often the conductors of foul vapour into the houses: such pipes are very frequently found not trapped; the consequence is, that the air of the apartment becomes loaded with noxious effluvia; and, when the sink is not being used, a dish-cloth is sometimes placed over the mouth of the pipe to prevent the emanation of stench.

It is to be hoped that in future, builders generally will pay more attention to, and give their workmen stricter injunctions as to the proper construction of drains, for most assuredly the general health of the whole community at large is somewhat dependant upon such construction. The inefficiency of common

brick drains, their improper forms, and the dilapidated and rotten state in which they are universally found, ought immediately to lead to their re-construction where practicable, by using the cylindrical tubular drains, soil-pans, and stench-traps, recommended in this paper, or by any better means that may be devised. With these, however, escape of deleterious effluvia would be prevented, and consequently the atmosphere would remain pure.

#### INSECURITY OF THE IPSWICH COUNCIL CHAMBER.

*Report of Messrs. J. M. Clark and George Mason.*

THE Estate Committee of the Ipswich Corporation having referred the causes of the insecurity of the Council Chamber to Messrs. J. M. Clark and George Mason, those gentlemen reported that one of the girders in the principal floor had a permanent set of nearly 3 inches. This beam had a bearing of 21 feet between the points of support, and was of the scantling 13 inches by 12 inches; it carried near its centre one of the four columns of the Council Chamber, and, together with another girder of the same dimensions, a large portion of the floor. This was the beam which yielded so much to the pressure on the 9th ult., the remainder of the floor consisted of joists 4½ inches by 3 inches. There was no appearance of any settlement in the surrounding walls. The fracture observable in the plastering was occasioned by the regular settlement of the new work. The sinking of the floor was attributable to the insufficiency of the scantlings of the floor timbers, which were left without trussing. In the opinion of Messrs. Clark and Mason, the following means should be adopted to remedy the existing defects. The girder, immediately beneath the column, should be tied up by a wrought-iron rod 1½ in. in diameter, to a pair of trussed principals inserted between the beams of the roof, resting on the present principals, which should be strengthened to receive them, and on the outside walls, the rod being concealed within the column. The other girder should be trussed with cast and wrought iron. The joists should be removed, and others of a scantling 7 inches by 2½ inches inserted in their place. The present floor-boards should also be removed, and a new 1½ in. batten floor substituted, the old boards to form a gangway in the roof, which was much needed. By these means the floor of the Council Chamber might be rendered perfectly secure.

[As far as we can judge from the description, these recommendations appear judicious: the failure appears to have arisen from the common fault of casting a burthen upon a beam at its weakest part; the cast iron girders at Oldham broke from the same cause.—E.D.]

THE LABOUR MARKET IN SOUTH AUSTRALIA. — Employment for blacksmiths, wheelwrights, bricklayers, and carpenters, is plentiful and well remunerated; and the increased demand for furniture of colonial manufacture is operating favourably for the really good workmen who have not embraced a rural life. The importation of wooden houses has ceased, and it is no longer necessary to bring household furniture of any kind. Domestic servants are extremely scarce, and obtain high wages. The mineral discoveries in various parts of the province, and the mines already in full operation, have furnished employment to all the miners here, who are not too firmly wedded to pastoral and agricultural pursuits to quit them for high wages. Strong inducements are being offered, through accredited agents, to miners in the neighbouring colonies, so that a large accession of mining operatives may be expected; but in all probability far too few for the employ at present afforded, and in sure prospect. But the undeniable advantages which present themselves to mining capitalists are, by this time, known in Britain, and will probably superinduce an influx of new employers, and a body of thrifty miners from the old country. For painters, plasterers, and sawyers, the great increase and improvement of buildings have wrought a most welcome change; but shipwrights (so called) are any thing but such, from the nature of their present employments, there being no ship-building, and few jobs of repair.—*Adelaide Observer*, June 10.

#### LIST OF NEW PATENTS RELATING TO ARCHITECTURE, ENGINEERING, &c., GRANTED FOR ENGLAND.

*Furnished by Mr. A. Prince, of the Office for Patents of Inventions, Lincoln's-Inn Fields.*

[SIX MONTHS FOR ENROLMENT.]

Newman, William, of Birmingham, brass-founder, for a certain improvement or certain improvements in window blinds. November 2.

Bewley, William, of Dublin, gentlemen, for improvements in fastenings for doors, windows, and other places where fastenings are used. November 2.

Jordan, Thomas Brown, of Cottage-road, Pimlico, mathematical divider, for improvements in the manufacture of blocks or surfaces, for surface-printing, stamping, embossing, and moulding. November 2.

Brunton, William, jun., of Pool, near Truro, Cornwall, engineer, for improvements in apparatus for dressing ores. November 2.

Thomas, Joseph, of Finch-lane, publisher, for a new and improved tube. (Being a communication.) November 5.

Geary, Stephen, of Hamilton-place, New-road, architect and engineer, for certain improvements in the machinery, apparatus, and arrangements for the supply and distribution of water for public and private uses, but more particularly in cases of fire. November 7.

Taylor, Henry Borriskill, of Piccadilly, lamp-manufacturer, for improvements in apparatus for transmitting light from lamp and other burners. November 7.

Auld, David, engineer, of Dalmarnock-road, and Auld, Andrew, engineer, of West-street, Tradestown, Glasgow, for an improved method or methods of regulating the pressure and generation of steam in steam-boilers and generators. November 9.

Prosser, William, jun., of Windsor-terrace, Pimlico, gentleman, for improvements in the construction of roads, and in carriages to run thereon. November 9.

Freeman, Mark, of Sutton, Esq., for improvements in working or dressing the surface of stone. November 14.

North, William, of Stangate, slater, for improvements in covering roofs and flats with slate. November 14.

Farrell, Isaac, of Great Brunswick-street, Dublin, architect, for certain improvements in machinery, whereby carriages may be impelled on railways and tramways, by means of stationary engines, or other power, including certain apparatus connected with the carriages to run on the same. November 14.

Vatieu, Francis, of Finsbury-square, merchant, for improvements in preventing incrustation in steam-boilers and steam-generators. November 16.

Maudslay, John, of Lambeth, engineer, for certain improvements in steam-engines. November 16.

Reynolds, John William Buckle, of Lymington, Devon, engineer, for improvements in obtaining motive power for working locomotive carriages and other machinery. November 25.

Derr, Ebenezer May, of Ludgate-hill, gentleman, for improvements in the manufacture of horse-shoe nails. November 25.

Higginson, Francis, of Rochester, lieutenant in her Majesty's Navy, and Coles, Edward Robert, of Rochester, aforesaid, merchant, for certain improvements in the construction of buildings generally. November 21.

Spencer, John, agent of the Phoenix Iron Works, West Bromwich, Stafford, for improvements in manufacturing or preparing plates of iron or other metal, for roofing and other purposes to which the same may be applicable. November 23.

Baillie, Benjamin, of Henry-street, Middlesex, glazier, for improvements in regulating the ventilation of buildings. November 25.

Millichap, George, of Birmingham, for improvements in the construction of axle-trees. November 25.

Leroy, Narcisse, of Paris, in the kingdom of France, merchant, for improvements in covering the tops of bottles, jars, and other vessels. November 28.